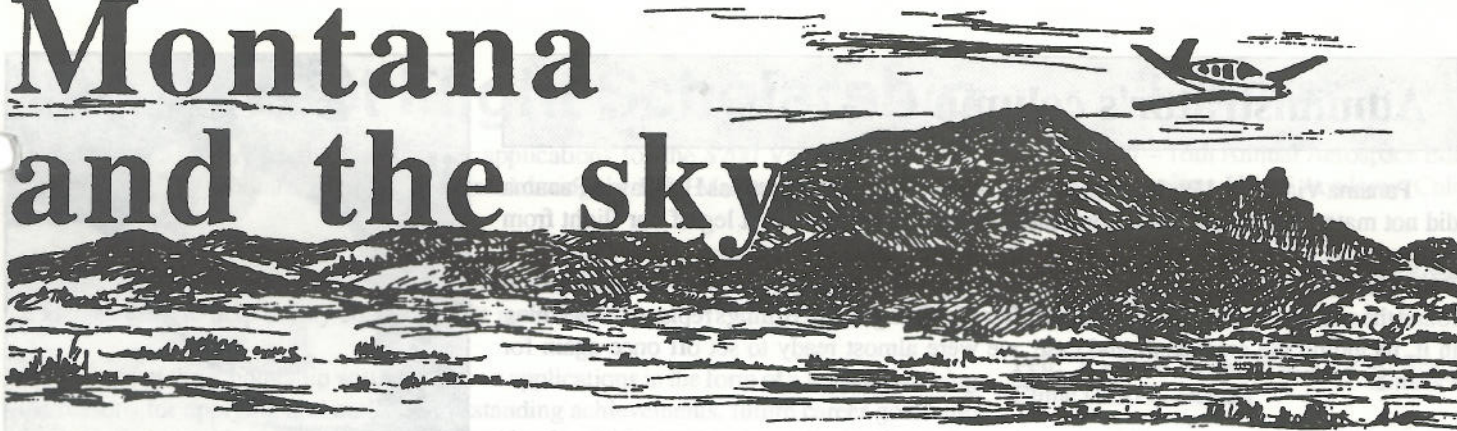


Montana and the sky



Department of Transportation - Aeronautics Division

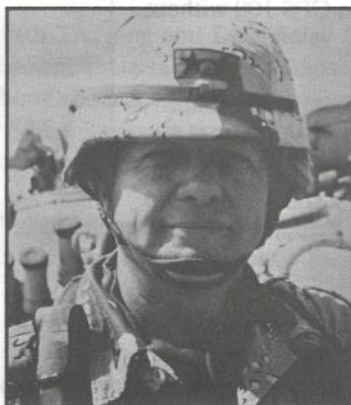
Vol. 43, No. 1

January 1992

Distinguished Montana Aviators of International Prominence to Address Conference

Major General Paul Funk

Major General Paul Funk, Vice Director, J-3 of the Joint Staff, Washington, D.C., will be the keynote banquet speaker during the 1992 Montana Aviation Conference. Major General Funk was born in Roundup, is a ROTC officer and graduate of Montana State University. His military schooling includes the Armor Basic and Advanced Courses, the Armed Forces Staff College, the Army War College, and Primary Helicopter and Aviation Schools. He holds a masters degree in Psychological Counseling and a Doctorate of Education degree in Education Administration, both from Montana State University.



Major General Funk has served primarily in troop leading assignments. His overseas assignments include service in Vietnam, Korea, Europe and most recently Saudi Arabia.

His command experience includes Company A, 1st Battalion, 33d Armor; Troop A, 1st Squadron (Airmobile), 9th Cavalry; Troop D, 4th Squadron, 7th Cavalry; 5th Battalion, 33d Armor; the 194th Armored Brigade (Separate) Ft. Knox; Commanding General, National Training Center and Fort Irwin; and 3d Armored Division. He commanded the 3d Armored Division during its deployment to Saudi Arabia and throughout all combat operations in Saudi Arabia, Iraq and Kuwait. His current assignment is as the Vice Director, J-3, the Joint Staff, Washington, D.C.

His awards include the Distinguished Service Medal, Distinguished Flying Cross, Legion of Merit with Oak Leaf Cluster, Bronze Star Medal with Oak Leaf Cluster, Meritorious Service Medal with two Oak Leaf Clusters, Air Medals with V Device and 25 Oak Leaf Clusters, Army Commendation medal with V Device and four Oak Leaf Clusters and the Army Aviation Badge.

Astronaut Jim Adamson

Colonel James C. Adamson will speak at the awards luncheon to be held Saturday, February 29, during the 1992 Montana Aviation Conference.

Adamson has been employed at the Lyndon B. Johnson Space Center since 1981. During the Operations Test Flight Test Phase of the Shuttle Program, he served as a research test pilot and Aerodynamics Officer in Mission Control. Following completion of the four operations test flights, he became Guidance Navigation and Control Officer for STS missions 5 through 11. As a research pilot and test pilot for NASA's Aircraft Operations Division he conducted airborne remote sensing studies in Biospheric Research.



Selected by NASA as an astronaut in May 1984, Adamson became qualified for assignment as a mission specialist on future Space Shuttle flight crews. His initial technical assignment was verification of mission software in the Shuttle Avionics Integration Laboratory (SAIL). In November 1985, he was selected to the crew of a Department of Defense mission, which was subsequently canceled due to the Challenger accident. During the Shuttle program reconstruction/restoration period Adamson served in the NSTS Program Office as Assistant Manager for Engineering Integration.

In February 1988 Adamson was assigned to the Kennedy Space Center as Director for the STS Processing Operations. He served in this post from September 1989 to October 1990 when he was assigned to the flight crew STS-43.

The nine-day mission Atlantis launched from the Kennedy Space Center, Florida, on August 2, 1991. During the flight, crew

See Adamson, page 3

Administrator's column

Panama Via Global Positioning: As you know, our 1990 Christmas Holiday in Panama did not materialize due to an unfortunate mishap while on the first leg of our flight from Helena to St. George, Utah. "Give up" or "forget it" was not in my vocabulary and three Bonanza's later I finally found one which I thought would be the ticket. WRONG! I soon found the engine to be a total disaster and after MAC Engines in Billings replaced everything in it, including the crankshaft and case, we were almost ready to set off once again for Panama.

I say "almost" because, although we have Loran-C, previous experience told us that it would not function in Central America. We felt we needed "global positioning" to assure us of pinpoint accuracy while navigating over the ocean around El Salvador and Nicaragua. Of course, I immediately thought of our good friends at Aerotronics in Billings. I visited with Steve Vold and he was anxious to have a new Garmin GPS 100 put to the test. Naturally, I was elated.

After a day of confusion and frustration trying to figure out how to operate the unit by using the instruction manual, I gave up. While on our first enroute leg, we very soon figured it out without the poorly written instruction manual. Actually, the unit is quite "user friendly" and if you have operated Loran-C you can operate the Garmin GPS 100 without the manual.

At first light on December 21st, I, accompanied by longtime flying companion and co-pilot Brenda Spivey departed Helena for Hermosillo, Mexico, with a fuel stop in St. George, Utah. The next day we flew to Puerto Escondido, Mexico, with a fuel stop in Zihuatenejo, Mexico. On the 23rd we flew to Tapachula, which is located at the most southwestern tip of Mexico on the boarder of Guatemala, and cleared Mexican Customs & Immigrations to depart Mexico.

At this point, the Garmin GPS became most important as we then flew out to sea about 30 miles and skirted around El Salvador and Nicaragua. We were able to plot our desired latitude and longitude on the chart and then enter it into the Garmin GPS and fly an accurate course to each waypoint. We were able to advise CENAMER - radio (Central American Center) of our exact positions and estimate to the next waypoint.

While in Panama we flew out to islands on both the Pacific and the Caribbean sides and again were able to depend on the Garmin GPS for navigation.

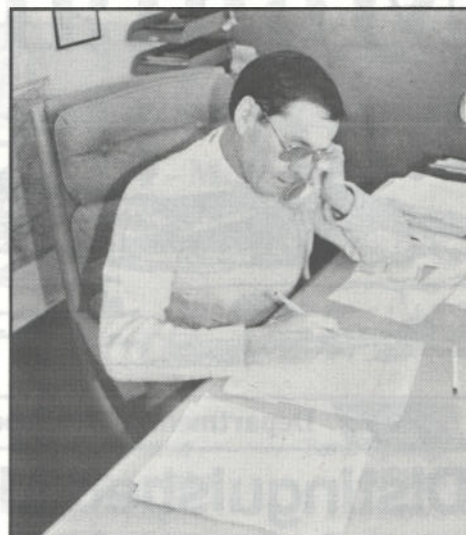
Upon our return trip we flew the Eastern route and again used the GPS for pinpoint navigation over the ocean between the San Andres Islands (owned by Columbia) and Nicaragua on our way to Honduras. This route had published intersections on our Jep Chart, which we programmed into the Garmin GPS. Again, we were able to report our positions and estimates with 100% accuracy.

While in Honduras we flew to some of the northshore islands and then returned back to Montana continuing to utilize the Garmin GPS with total success and satisfaction.

I do not know of a better means of worldwide navigation for a General Aviation aircraft that is affordable. I would like to thank Steve Vold and Martin Elshire at Aerotronics, Inc., in Billings for making this fine Garmin GPS available for us to evaluate on our Christmas vacation to Panama.

☆☆☆☆☆

On behalf of the Aeronautics Board and Division, I would like to wish you all a Happy and Prosperous New Year. ♦



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Stan Stephens, Governor
John Rothwell, Director

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Van De Riet Flight Scholarship

January 31, 1992, is the deadline for applications for the \$200 Van De Riet Flight Scholarship. The scholarship will be presented during the 1992 Montana Aviation Conference in Bozeman.

The scholarship was established as a memorial to Jack Van De Riet by his wife Ruth. It is to be used to help defray costs of flight instruction.

Award of the scholarship will be based on applications in the form of a letter explaining the reasons for applying and outlining outstanding achievements, future career goals and past aviation experience. Letters of application should be sent to: Montana Aeronautics Division, P.O. Box 5178, Helena, MT 59604 or call Fred Hasskamp at 444-2506 for more information.

This will be the last year for the Van De Riet Scholarship, which has been awarded for the past ten years. ♦

From Adamson, page 1

members deployed the fifth Tracking and Data Relay Satellite (TDRS-E), in addition to conducting 32 physical, material, and life science experiments, mostly relating to the Extended Duration Orbiter and Space Station Freedom. After 142 orbits of the earth in 213 hours, the STS-43 mission concluded with a landing on Runway 15 at the Kennedy Space Center on August 11, 1991.

A veteran of two space flights Adamson flew on STS-28 in 1989 and STS-43 in 1991. With completion of his second mission, Adamson has logged over 334 hours in space.

As a military test pilot, Adamson has flown research aircraft and has logged over 3,000 hours of flight time in over 30 types of helicopters, piston props, turbo props, and turbo jet aircraft. During Vietnam he flew in the IV Corps area and Cambodia with the Air Cavalry as Scout Pilot, Team Lead, and Air Mission Commander. Adamson completed his Bachelor of Science degree in engineering and was commissioned a Second Lieutenant in the Army at West Point. Following completion of his masters degree in aerospace engineering at Princeton University, he became Assistant Professor of Aerodynamics at the United States Military Academy. While at West Point, he developed and taught courses in Fluid Mechanics, Aerodynamics, Aircraft Performance, and Stability and Control. He also developed flight laboratories in aircraft flight testing and completed a test on aircraft performance. In addition to being an Experimental Test Pilot and Master Army Aviator, Adamson is also a Certified Professional Aerospace Engineer and licensed Commercial Pilot

Adamson was a distinguished graduate of his class in undergraduate pilot training, and distinguished graduate of his class in graduate fixed-wing and multi-engine pilot training. During aerial combat in Southeast Asia he earned two Distinguished Flying Crosses, as well as 18 Air Medals, and three Vietnamese Crosses of Gallantry. He was also awarded the Bronze Star, the Meritorious Service Medal, two Army Commendation Medals, the National Defense Service Medal, and the Vietnamese Campaign Medal. He is also a recipient of the NASA Space Flight Medal.

Adamson makes his home in Monarch, Montana. ♦

Calendar

Jan. 16 - 17 – 16th Annual Aerospace Education Symposium, USAF Academy, Colorado.

January 17 – Montana Aeronautics Board Meeting, Helena

Feb. 7 - 9 – Flight Instructor Refresher Clinic (FIRC), Helena.

Feb. 27 - 29 – Montana Aviation Conference, Bozeman.

March 2 - 4 – Upper Midwest Aviation Symposium, Radisson Inn, Bismarck, North Dakota.

Sept. 18 - 20 – Mountain Search Pilot Clinic, Kalispell. ♦

Ester Coombs-Vance Memorial Scholarship Offered

The Montana Chapter of the Ninety Nines has established a scholarship to aid in financing a female student pilots flight training.

The scholarship in the amount of \$100 will be awarded at the 1992 Montana Aviation Conference at Bozeman. Applicants must be at least 16 years of age, reside and receive training in Montana.

Interested applicants must submit an essay of approximately 500 words stating the reasons for wanting to learn to fly, including where the interest began and plans for their private pilot certificate. In addition, applicants must include their plans for contributing to the growth and betterment of the Montana Ninety Nines.

Other application materials are required. For more information or to obtain an application call Tina Pomeroy at 222-6826 or write to her at 1214 W. Crawford, Livingston, MT 59047, or write Gail Sanchez at 719 South 9th, Bozeman, MT 59715.

The deadline for submitting an application is January 31, 1992, so hurry and call for your application today. ♦

Conference to feature assortment of session subjects

The program for the 1992 Montana Aviation Conference, "1942-1992 Fifty Years of the Wonder of Aviation," will include something for everyone with an interest in aviation. The Conference will be held February 27-29, 1992, at the Holiday and GranTree Inns in Bozeman.

Conference sponsors include the Montana Airport Managers Association, Montana Antique Aircraft Association, Civil Air Patrol, Montana Chapter of the 99s, and the Montana Aeronautics Division.

Major speakers will include United Airlines Captain Al Haynes, speaking at the kick-off luncheon on February 27; Colonel James Adamson, NASA Astronaut, Saturday awards luncheon, February 29; and Major General Paul Funk, Saturday banquet, February 29.

Following the banquet on Saturday evening, a floor show medley and dancing music will be provided by The Helena Big Band. Guests are encouraged to dress as the theme suggests in old uniforms, flight suits, Hawaiian shirts or grass skirts.

Added attractions include Dr. Jerald Cockrell in a Thursday evening session. Cockrell will also conduct a Flying Friend Session during the Conference. A performance at the award luncheon on Saturday by Montana State University's own Air Force Reserve Officer Training Corps (AFROTC) Blunderbirds is sure to delight those in attendance. The Blunderbirds perform a parody of the United States Air Force Thunderbirds.

The Aircraft Mechanics Refresher Seminar will be held in conjunction with the conference. The seminar will be held at various times during the three days of the conference for a total of eleven hours of instruction.

The Aerial Applicators Seminar will be held at Montana State University on Wednesday, February 26, and will be followed by dinner that evening.

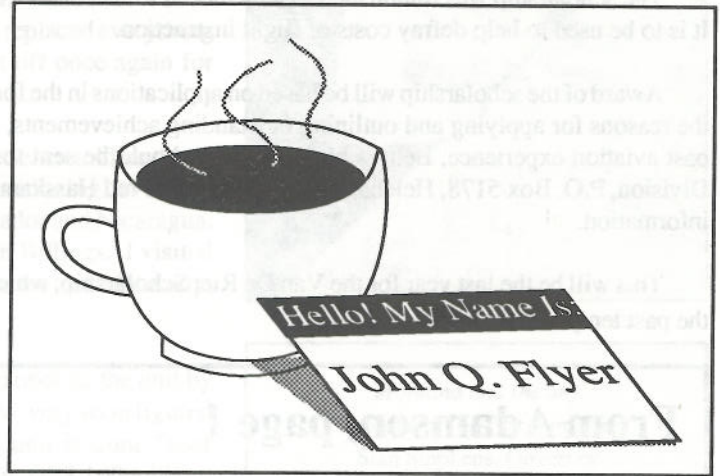
Speakers have been arranged for concurrent sessions that include: Flying in Canada, Soaring, Collision Avoidance, Avoiding Stall Spin Accidents, World War II Pilot Roundtable Discussion, The B-17 - A Legend in Its Time, and a presentation by the National Weather Service to name a few.

Fred Isaac, Regional Administrator, Northwest Mountain Region FAA, will conduct an FAA Question and Answer Session on Thursday afternoon.

Over thirty-five aviation related companies from across the country will reserve booth space for the trade show to be held in conjunction with the conference. An addition to this year's conference is a product demonstration session for interested exhibitors.

Events in addition to the three formal meal functions will include a free hospitality hour in the exhibit area, coffee break in the exhibit area, many of them sponsored by aviation related firms, and a luncheon on Friday that is offered free to those who have paid a registration fee.

A spouses/guests program will be held Friday afternoon. An



exciting trip is planned to the Museum of the Rockies. While visiting the museum a journal writing seminar and planetarium show will also be offered. Interested parties should sign up at the registration desk. Other options include shopping and skiing at Bridger Bowl.

The Montana Aeronautics Board will hold an informal Question & Answer Session on Saturday afternoon February 29. The Aviation Organizations of Montana will also hold a board meeting. Annual meetings of the MPA and MATA will also be conducted. In addition, MAMA will hold its spring meeting. Other aviation organizations will also conduct business/board meetings.

Thousands of dollars worth of door prizes will be given away during the Conference. The 99s will again be raffling off a hand held radio to be given away at Friday's luncheon.

The Aircraft Owners and Pilots Association (AOPA) will conduct sessions on national legislative affairs affecting aviation.

Registration fees are \$30 for an individual and \$40 for a family. This allows entrance into all sessions and includes drink tickets for a hospitality hour and a free luncheon on Friday, February 28. A day pass allowing entrance into the sessions and exhibit area for one day is also available for \$15. A special drawing will be conducted for those who pre-register.

Meal tickets are separate from the registration with the exception of the Friday luncheon and **Must be reserved no later than 24 hours in advance of each meal.** Tickets for the kick off luncheon must be reserved through pre-registration.

Rooms for the conference have been blocked at the GranTree (800-624-5865) at the rate of \$42 for a single; \$48 for a double and at the Holiday (800-366-5101) at the rate of \$44 for a single, \$48 for a double; \$51 for a king. Other motels within walking distance are the Days Inn at 800-325-2525 and the Bozeman Inn at 800-648-7515.

A very basic schedule, subject to change, and a registration form appear on page five of the newsletter. ♦

Tentative Schedule - 1992 Montana Aviation Conference

Wednesday, February 26

Afternoon

Booth Set-up
Aerial Applicators Seminar

Evening

Aerial Applicators Dinner

Thursday, February 27

Morning

Mechanics Seminar
Concurrent Sessions
Luncheon
Kick-off Luncheon Speaker:
Captain Al Haynes

Afternoon

Mechanics Seminar
MAMA Board Meeting
Concurrent Sessions

Evening

Dr. Jerry Cockrell

Friday, February 28

Morning

Mechanics Seminar
Concurrent Sessions
MAMA Membership Meeting
MFF Business Meeting
Flying Friends Seminar
Luncheon In Exhibit Area Free to
Registrants. Door Prizes

Afternoon

FAA Question & Answer Session
Concurrent Sessions
MATA Business Meeting
Spouses/Guests Program

Evening

Hospitality Hour in Exhibit Area

Saturday, February 29

Morning

EAA Business Meeting
MAAA Business Meeting
99s Business Meeting

MPA Business Meeting

Mechanics Seminar

Concurrent Sessions

Luncheon

Awards Luncheon Speaker:

Colonel Jim Adamson

Entertainment: The
"Blunderbirds"

Afternoon

Concurrent Sessions
Aeronautics Board Question &
Answer Session
AOM Meeting

Evening

Banquet Speaker: Colonel
Major Paul Funk
Entertainment: The Helena Big
Band

The exhibit area will open Thursday morning, February 27, at 10 am, and will be open at various times during the Conference through Saturday afternoon. All coffee breaks, and Friday's lunch and hospitality hour will be held in the exhibit area. ♦

1992 Montana Aviation Conference

February 27-29, 1992

GranTree and Holiday Inns

Bozeman, Montana

Mail To: Montana Aviation Conference
P.O. Box 5178
Helena, MT 59602

Please Type or Print

Name(s) of Participant(s) (for name tags):

Address

Phone

Your Organization Affiliation:
(choose one only)

MPA	_____	99s	_____
MFF	_____	CAP	_____
MATA	_____	MAAA	_____
MAMA	_____	EAA	_____
Other	_____	N/A	_____
AMAA	_____		

Please Make the Following Reservations:

Note: Meal tickets must be purchased no later than 24 hours in advance.

Reg. Fee -	_____ @ \$30/person	\$ _____
	_____ @ \$40/family	\$ _____
Daily Pass	_____ Th _____ F _____ S @ \$15/day	\$ _____
Thurs. Luncheon	_____ @ \$9	\$ _____
Fri. Luncheon	_____ @ FREE	\$ _____
Sat. Luncheon	_____ @ \$9	\$ _____
Sat. Banquet	_____ @ \$20	\$ _____

Total Enclosed: \$ _____

MATA News

By: Wayne C. Turner
Secretary-Treasurer

The MATA will be participating in the annual Montana Aviation Conference. A recertification session will be conducted on Wednesday, February 26, preceding the conference. The session will include a Weed Seedling Identification and Crop Staging Clinic. The program is still tentative, but it is expected that six recertification points will be received from the Department of Agriculture. Paid-up 1992 members of MATA will be reimbursed \$25 for attendance at this session or the MABA clinic January 21 in Great Falls. There will be a \$50 door prize drawing, open to all paid-up members of MATA attending the 1992 Aviation Conference. ♦

Aviation Organizations of Montana to Meet

The Aviation Organizations of Montana (AOM) will meet during the 1992 Montana Aviation Conference. The meeting will be held Saturday, February 29, at 2:00 pm. The board consists of appointed representatives from each of the Montana aviation organizations. Chairman of the Board is Dave Gates, Montana Pilots Association.

Any group interested in hosting the 1994 Aviation Conference must submit a letter of intent by February 18, 1992, to AOM at P.O. Box 751, Helena, MT 59624. All letters will be read into the official record at the AOM meeting held during the conference.

AOM will conduct a meeting in April at which time groups and facilities interested in hosting the 1994 Conference must appear and present a facility outline and proposed budget.

Other April agenda items will include a critique and financial report of the 1992 conference.

The terms of the AOM representatives for the following organizations expire in 1992, and groups are asked to be prepared to announce their new representatives at the February 29 meeting, MATA, CAP, 99s, and MAAA.

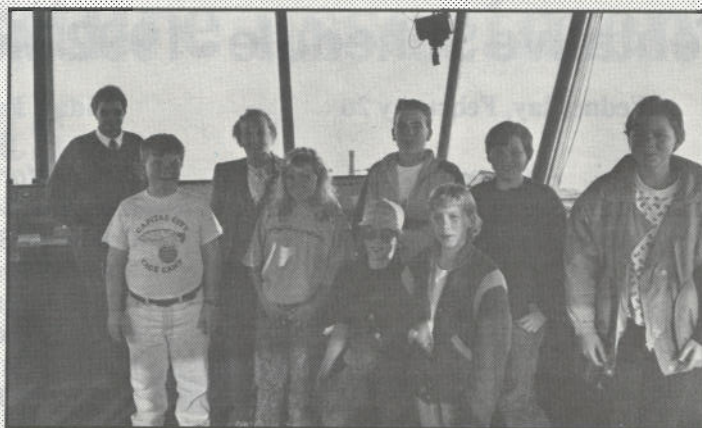
The public is always invited and encouraged to attend. ♦

Vo-Tech Student Awarded Airline Tickets

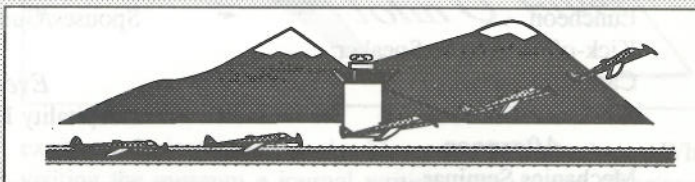
Bob Barker, an aviation maintenance student was presented two round trip airline tickets to Salt Lake City courtesy of Sky West Airlines.

The tickets were donated by Sky West Airlines as a giveaway during the 1991 Montana Aviation Conference in Kalispell. Buck Jones, of Hayden Lake, Idaho, and formerly of West Yellowstone, was the giveaway winner at Kalispell and graciously donated the tickets.

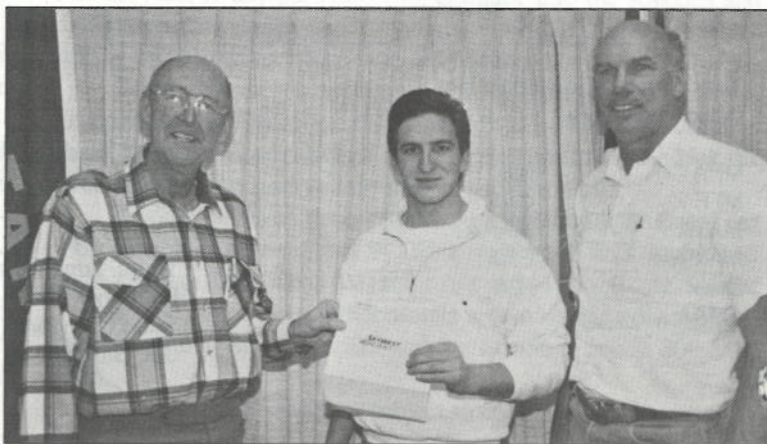
Pictured at right are Fred Hasskamp, Chief, Safety and Education Bureau, Bob Barker, and Phil Vittetoe, aviation mechanic instructor, Helena Vo-Tech. ♦



Starshine's Helena Middle School class pictured with Milt Cooper, Helena Tower Manager, while touring the FAA control tower during an aviation career awareness tour conducted by Montana Aeronautics.



One hundred sixth graders from C.R. Anderson Middle School toured the Helena Airport.



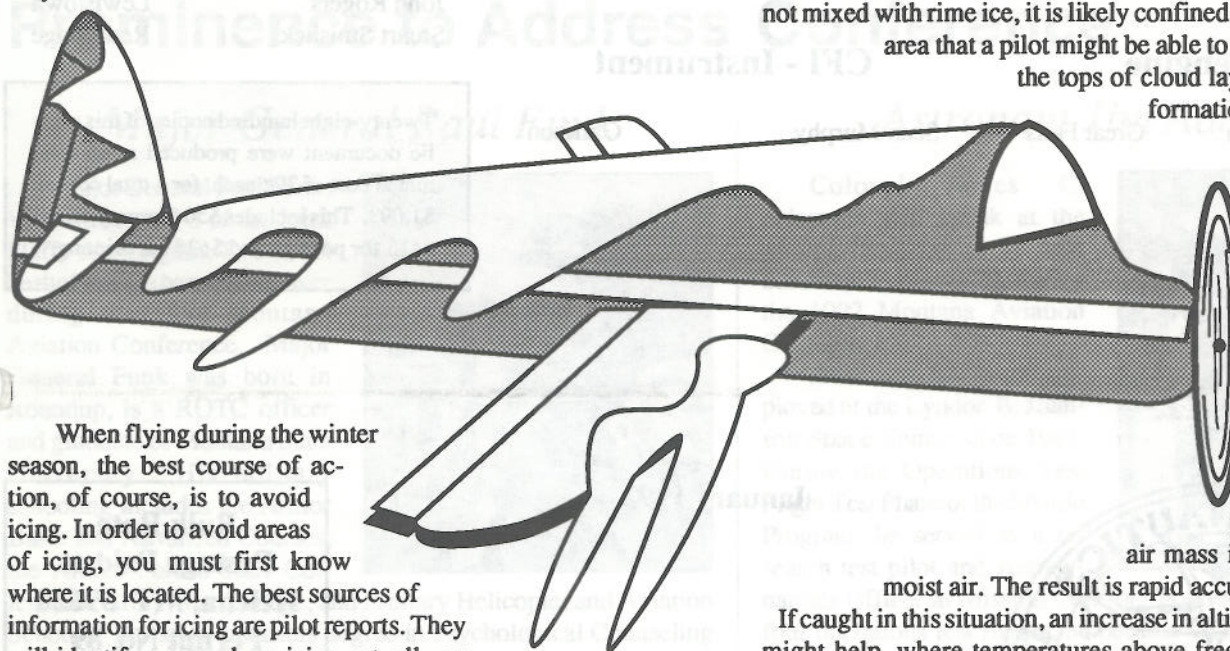
Aircraft Icing

By: Paul F. Eyssautier

National Weather Service, Great Falls

In the October issue of *Montana and the Sky*, Fred Hasskamp brought attention to winter weather conditions, and the need to prepare your aircraft and yourselves to fly in inclement weather. I would like to discuss icing; Where you are likely to find it, how it can be avoided, and if flying in ice, how to get out.

An FAA pamphlet, *Air Traffic Bulletin*, dated October 1991, has excellent information concerning aircraft icing, portions of which were written by Ron Olsen, NWS meteorologist at Kansas City.



When flying during the winter season, the best course of action, of course, is to avoid icing. In order to avoid areas of icing, you must first know where it is located. The best sources of information for icing are pilot reports. They will identify areas where icing actually occurred. Icing areas can also be identified in the Area Forecast, and appropriate AIRMETS. Those having access to NWS products through DUATS, or PC based self-briefing programs such as PanAm Weather, can check the Area Forecast that covers your route of flight for a listing of states included in the AIRMET. AIRMET ZULU provides details concerning freezing levels and significant icing conditions.

If, during the course of your flight, you find yourself accumulating aircraft icing, you will need to be able to recognize the type and extent of icing in order to get out of it. A good pre-flight briefing will certainly provide you with enough information to take the proper corrective action. Being able to readily identify the type of icing, and the most likely cause, will also help.

Ice forms when super-cooled droplets, liquid water that has not frozen in air that is below freezing, strikes an air frame, or other structure. The vertical extent of the super-cooled water droplets depends on the strength of the updrafts. The type of icing is a function of the size of the water droplets, and the temperature of the

atmosphere. In most cases icing will not occur above -25 degrees C. At this temperature most droplets have already changed to ice crystals, posing a minimum threat to aircraft.

Clear ice forms when large super-cooled water droplets strike the airframe. Instead of immediately freezing, the water flows over the airframe and freezes in a smooth sheet. This type of icing is generally found in cumuliform clouds where updrafts can carry larger water droplets higher through the atmosphere. If clear ice is not mixed with rime ice, it is likely confined to a narrow horizontal

area that a pilot might be able to fly through. Knowing the tops of cloud layers and gathering information from pilot reports will help you decide on the proper corrective action.

Freezing rain occurs when warm moist air overrides cooler air. This quite frequently occurs over the western valleys of Montana. It also occurs over the eastern plains when an Arctic

air mass is overrun by warmer moist air. The result is rapid accumulation of clear ice.

If caught in this situation, an increase in altitude of a thousand feet might help, where temperatures above freezing could be found. However, frequently freezing rain develops in a moist environment with temperatures remaining very near freezing for several thousand feet above the surface. Above the freezing rain, mixed clear and rime icing is likely to be encountered.

Small super cooled water droplets that freeze immediately upon striking the airframe is called rime ice. It is generally found in stratiform clouds. It can be very extensive along a horizontal plane. It may also be found in clear air as water vapor sublimates (goes directly from gaseous to solid state) into ice crystals. This has a more frosty appearance. Stratiform clouds are generally found in a stable environment, with weak vertical updrafts. A change in altitude of two to three thousand feet likely will take you out of the icing area.

When anticipating flying through an area where icing is known to exist, or is expected, the best course of action is avoidance. If caught in an icing area, knowing the type of icing and the conditions causing it will go a long ways towards providing the pilot with clues to escape further icing problems. ♦

FAA ISSUES CERTIFICATES

Private

Debbie Bleyker
James Gundersen
Edward Schilling

Missoula
Helena
Livingston

Steven Ard
Doug Chapman
Michael Reese

Glider

Belgrade
Belgrade
Bozeman

CFI - Multi-engine

Dominique Bugnon

Great Falls

Instrument

Terry Surratt
David Uthoff

Billings
Bozeman

William Hofman
Marcus Jones

ATP

Wolf Point
Great Falls

CFI - Renew

David Coon
Joseph Dutton
George Knutson
Charles Rogers
John Rogers
Stuart Smishek

Helena
Sand Springs
Billings
Lewistown
Lewistown
Red Lodge

Multi-engine

Dominique Bugnon

Great Falls

Sean Murphy

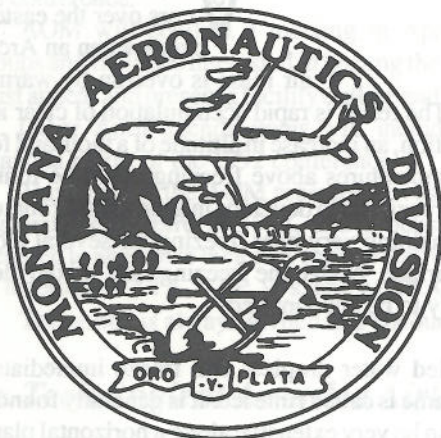
Garrison

CFI - Instrument

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January 1992

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